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[Title of the Invention]

INK JET PRINTING METHOD AND INTERMEDIATE IMAGE RECEIVING
MEDIUM

[Claims]

[Claim 1] An ink jet printing method, in which an image is once printed on an intermediate image receiving medium at least including a base material and an image receiving layer by ink jet printing, only the printed image receiving layer is transferred to image receiving paper, wherein as the intermediate image receiving medium, an image receiving layer released from at least a base material is provided on the base material, water or a solvent is applied to the image receiving layer, thereby exhibiting the adhesive property, and only the printed image receiving layer is transferred to the image receiving paper by pressure.

[Claim 2] The ink jet printing method according to claim 1, wherein in applying water or a solvent to the image receiving layer, water or the solvent is injected from an ink jet nozzle head similarly to ink.

[Claim 3] The ink jet printing method according to claim 1, wherein in applying water or a solvent, water or the solvent is supplied by a water applicator roll.

[Claim 4] An intermediate image receiving medium, for use in a method in which an image is once printed on an

intermediate image receiving medium at least including a base material and an image receiving layer by ink jet printing, only the printed image receiving layer is transferred to image receiving paper, wherein as the intermediate image receiving medium, the base material is provided with an image receiving layer releasable from at least the base material, water or a solvent is applied to the image receiving layer, thereby causing the adhesive property to appear, and only the printed image receiving layer is transferred to the image receiving paper by pressure.

[Claim 5] The intermediate image receiving medium according to claim 4, wherein the intermediate image receiving medium is constituted by the base material and the image receiving layer, and the image receiving layer contains ultraviolet ray absorbing material.

[Claim 6] The intermediate image receiving medium according to claim 4 or 5, wherein the intermediate image receiving medium is constituted by the base material and the image receiving layer, and the image receiving layer contains a slipping agent.

[Claim 7] The intermediate image receiving medium according to claim 4, wherein the intermediate image receiving medium is constituted by a base material, a separating layer and an image receiving layer.

[Claim 8] The intermediate image receiving medium

according to claim 7, wherein the intermediate image receiving medium is constituted by the base material, the separating layer and the image receiving layer, and both or one of the separating layer and the image receiving layer contains ultraviolet absorbing material.

[Claim 9] The intermediate image receiving medium according to claim 8, wherein the intermediate image receiving medium is constituted by the base material, the separating layer and the image receiving layer, and the separating layer contains a slipping agent.

[Claim 10] The intermediate image receiving medium according to claim 4, wherein the intermediate image receiving medium is constituted by the base material, a mold releasing layer, the separating layer and the image receiving layer, and separating is performed between the mold releasing layer and the separating layer.

[Claim 11] The intermediate image receiving medium according to claim 10, wherein the intermediate image receiving medium is constituted by the base material, the mold releasing layer, the separating layer and the image receiving layer, and both or one of the mold releasing layer and the image receiving layer contains ultraviolet absorbing material.

[Claim 12] The intermediate image receiving medium according to claim 11 or 12, wherein the intermediate image receiving medium is constituted by the base material, the mold

releasing layer, the separating layer and the image receiving layer, and the separating layer contains a slipping agent.

[Claim 13] The intermediate image receiving medium according to one of claims 11 to 13, wherein the intermediate image receiving medium is constituted by the base material, the mold releasing layer, the separating layer and the image receiving layer, and the mold releasing layer contains a mat material.

[Claim 14] The intermediate image receiving medium according to one of claims 4 to 13, wherein the surface of the side of the base material used in the intermediate image receiving medium, which is coated with an image forming layer, is subjected to mat finishing.

[Detailed Description of the Invention]

[0001]

[Technical Field to which the Invention Belongs]

This invention relates to a method for creating an image using an ink jet printer and a medium.

[0002]

[Prior Art]

The ink jet printer has been used in various fields for outputting from a computer, proofing, and autographing for signboard, a poster and the like. Generally as an image receiving paper, used is paper or paper or a film provided with

a layer for receiving ink. The printed image has low resistance such as water resistance and light resistance. In the case of using the printer in the autographing field, when a film is laminated on the printed surface in order to improve the resistance, mostly the feeling of the image receiving paper is impaired, although the resistance is improved.

[0003]

[Problems that the Invention is to Solve]

This invention has been made in the light of such circumstance, and it is an object of the invention to provide a printing method and a medium for use in it, which may improve water resistance, light resistance and wear resistance at the same time without impairing feeling.

[0004]

[Means for Solving the Problems]

According to the invention, a first invention provides an ink jet printing method, in which an image is once printed on an intermediate image receiving medium at least including a base material and an image receiving layer by ink jet printing, only the printed image receiving layer is transferred to image receiving paper, wherein as the intermediate image receiving medium 1, an image receiving layer 12 released from at least a base material is provided on the base material 11, water or a solvent is applied to the image receiving layer 12, thereby exhibiting the adhesive property, and only the printed image

receiving layer 12 is transferred to the image receiving paper 2 by pressure.

[0005]

According to the invention, a second invention provides an intermediate image receiving medium 1, for use in a method in which an image is once printed on an intermediate image receiving medium at least including a base material and an image receiving layer by ink jet printing, only the printed image receiving layer is transferred to image receiving paper, wherein as the intermediate image receiving medium, the base material 11 is provided with an image receiving layer 12 releasable from at least the base material, water or a solvent is applied to the image receiving layer 12, thereby causing the adhesive property to appear, and only the printed image receiving layer 12 is transferred to the image receiving paper 2 by pressure.

[0006]

Further, the invention provides the ink jet printing method as claimed in claim 1, wherein in the first invention, in applying water or the solvent to the image receiving layer 12, water or the solvent is injected from an ink jet nozzle head 3 similarly to ink.

[0007]

Further, the invention provides the ink jet printing method as claimed in claim 1, wherein in the first invention,

in applying water or the solvent to the image receiving layer 12, water or the solvent is supplied by a water applicator roll 4.

[0008]

Further, the invention provides the intermediate image receiving medium as claimed in claim 4, wherein in the second invention, the intermediate image receiving medium 1 is constituted by the base material 11 and the image receiving layer 12, and the image receiving layer 12 contains ultraviolet ray absorbing material.

[0009]

Further, the invention provides the intermediate image receiving medium as claimed in claim 4 or 5, wherein in the second invention, the intermediate image receiving medium 1 is constituted by the base material 11 and the image receiving layer 12, and the image receiving layer 12 contains a slipping agent.

[0010]

Further, the invention provides the intermediate image receiving medium as claimed in claim 4, wherein in the second invention, the intermediate image receiving medium 1 is constituted by a base material 11, a separating layer 13 and an image receiving layer 12.

[0011]

Further, the invention provides the intermediate image

receiving medium as claimed in claim 7, wherein in the second invention, the intermediate image receiving medium 1 is constituted by the base material 11, the separating layer 13 and the image receiving layer 12, and both or one of the separating layer 13 and the image receiving layer 12 contains ultraviolet ray absorbing material.

[0012]

Further, the invention provides the intermediate image receiving medium as claimed in claim 7 or 8, wherein in the second invention, the intermediate image receiving medium 1 is constituted by the base material 11, the separating layer 13 and the image receiving layer 12, and the separating layer 13 contains a slipping agent.

[0013]

Further, the invention provides the intermediate image receiving medium as claimed in claim 4, wherein in the second invention, wherein the intermediate image receiving medium 1 is constituted by the base material 11, a mold releasing layer 14, the separating layer 13 and the image receiving layer 12, and separating is performed between the mold releasing layer 14 and the separating layer 13.

[0014]

Further, the invention provides the intermediate image receiving medium as claimed in claim 10, wherein in the second invention, the intermediate image receiving medium 1 is

constituted by the base material 11, the mold releasing layer 14, the separating layer 13 and the image receiving layer 12, and both or one of the mold releasing layer 13 and the image receiving layer 12 contains ultraviolet ray absorbing material.

[0015]

Further, the invention provides the intermediate image receiving medium as claimed in claim 11 or 12, wherein in the second invention, the intermediate image receiving medium 1 is constituted by the base material 11, the mold releasing layer 14, the separating layer 13 and the image receiving layer 12, and the separating layer 13 contains a slipping material.

[0016]

Further, the invention provides the intermediate image receiving medium as claimed in one of claims 11 to 13, wherein in the second invention, the intermediate image receiving medium 1 is constituted by the base material 11, the mold releasing layer 14, the separating layer 13 and the image receiving layer 12, and the mold releasing layer 14 contains a mat material.

[0017]

Further, the invention provides the intermediate image receiving medium as claimed in one of claims 4 to 13, wherein in the second invention, the surface of the side of the base material used in the intermediate image receiving medium, which

is coated with an image forming layer 12, is subjected to mat finishing.

[0018]

[Mode for Carrying Out the Invention]

An ink jet printing method and an intermediate image receiving medium according to the invention will now be described in detail according to one mode for carrying out the invention. Fig. 1 is a schematic diagram of the principal part in the case of using an ink jet nozzle head similarly to ink in applying water or a solvent to an image receiving layer in the ink jet printing method of the invention. Fig. 2 is a schematic diagram of the principal part in the case of using a sponge roll as an applicator roll in applying water or a solvent to the image receiving layer. In Figs. 1 and 2, the reference numeral 1 is an intermediate image receiving medium, 11 a base material, 12 an image receiving layer, 13 a separating layer, 14 a mold releasing layer, 2 an image receiving paper, 3 an ink jet nozzle head, 4 a water applicator roll and 5 is a transfer roll. The invention provides a printing method and an intermediate image receiving medium 1 for use in it, wherein in an ink jet printer, first a desired image is printed in the form of a mirror image to the image receiving layer 12 of the intermediate image receiving medium 1 at least including the base material 11 and the image receiving layer 12 separable from the base material, after the image is printed, water or

the solvent is applied to the image receiving layer 12, thereby exhibiting the adhesive property, and only the image receiving layer 12 is transferred to the image receiving paper 2 by pressure of the transfer roll 5 or the like, whereby printing can be performed with the feeling of the image receiving paper kept as it is. As a method of applying water or the solvent to the surface of the image receiving layer 12 after the image is printed, preferably water or the solvent is injected as the last ink to the whole surface using one of the ink jet nozzle heads 3 of the ink jet printer, or injected to the image part only, or applied to the whole surface using a sponge roll. The intermediate image receiving medium of the invention is constituted in three ways as follows.

- (1) The base material 11 and the image receiving layer 12
- (2) The base material 11, the separating layer 13 and the image receiving layer 12
- (3) The base material 11, the mold releasing layer 14, the separating layer 13 and the image receiving layer 12

[0019]

The base material 11 uses a film of polyethylene, polypropylene, acryl, polyethylene terephthalate, polyethylene naphthalate, polyvinyl chloride, polystyrene, polycarbonate, polyimide, cellophane, celluloid, triacetyl cellulose and the like, a synthetic paper sheet, paper and paper to which olefin or the like is applied by extruding (olefin

is applied by extrusion coating).

[0020]

The image receiving layer 12 uses one or two or more kinds out of native or denatured polyvinyl alcohol, polyester, acryl, urethane, vinyl acetate series, albumin, gelatin, casein, starch, SBR latex, NBR latex, cellulose-base resin, polyamide, melamine, acryl amide, polyvinyl pyrrolidone, cationic-natured materials of the above, and materials obtained by adding a hydrophilic group to the above. Further, silica, clay, talc, diatomaceous earth, zeolite, calcium carbonate, alumina, zinc oxide, titanium white and so on may be added. After an image is printed, the surface of the image receiving layer is wetted with water or a solvent to be swollen or molten, thereby exhibiting the adhesive property. A solvent for wetting the surface is selected depending on resin to be used. Normally the thickness ranges from $1\mu\text{m}$ to $20\mu\text{m}$.

[0021]

A separating layer 13 used in the above constitution (2) and (3) uses one or two or more kinds out of cellulose derivative, styrene resin, styrene copolymer resin, acrylic resin, methacrylic acid, rosin ester resin, polyvinyl acetate resin, polyvinyl chloride, vinyl chloride-vinyl acetate copolymer, ethylene-vinyl acetate copolymer, polyester resin, polyurethane resin, butyral resin, polyamide resin, petroleum resin, chlorinated rubber, chlorinated polyolefin resin, and

epoxy resin. When isocyanate is added to the resin to interact each other, a tough film can be obtained. Further, it is possible to use material obtained by curing monomer or oligomer by an electron beam, an ultraviolet ray or heat. Silica, clay, talc, diatomaceous earth, zeolite, calcium carbonate, alumina, zinc oxide, titanium white and so on may be added. Normally the thickness ranges from 0.1 μ m to 5 μ m.

[0022]

The mold releasing layer 14 of the above constitution (3) uses silicone resin, acrylic resin, melamine resin, epoxy resin, fluorocarbon resin, and so on. Normally the thickness ranges from 0.1 μ m to 5 μ m.

[0023]

In order to improve the light resistance, an ultraviolet ray absorbent is added to the image receiving layer 12 in the constitution (1), and added to the both or one of the separating layer 13 and the image receiving layer 12 in the constitution (2) and (3).

[0024]

In order to improve wear resistance, a slipping agent is added to the image receiving layer 12 in the constitution (1), and added to the separating layer 13 in the constitution (2), (3). As the slipping agent, cited are wax especially polyethylene wax, silicon oil, silicon powder, fluorine powder and so on.

[0025]

In order to vary the condition of the surface of the transferred image receiving layer 12 or the separating layer 13, in the case of the constitution (1), (2), the side of the base material 11 coated with the image receiving layer 12 is mat-finished, whereby the shape can be transferred to the transferred image receiving layer 12 or the separating layer 13. In the case of the constitution (3), in addition to the above, the mold releasing layer 14 may be mat-finished.

[0026]

The image receiving paper to which the image receiving layer 12 of the intermediate image receiving medium 1 is transferred can use plastic, non-woven fabric, cloth, paper, synthetic paper and so on, and not only the film-like material but also the materials of all forms can be used if the image receiving layer 12 can be transferred by pressure of the transfer roll 5 or the like.

[0027]

[Embodiments]

The embodiments of the invention will now be described concretely.

[0028]

<Embodiment 1> As an intermediate image receiving medium, acrylic resin, which is cationic-denatured by quaternary ammonium salt and denatured taking vinyl pyrrolidone as a

hydrophilic group, is coated 10 μ m thick on polypropylene. First a desired image is printed in the form of a mirror image on the intermediate image receiving medium having specifications of Fig. 1. After that, water is applied to the surface of the image receiving layer in an entire solid pattern by the last ink jet nozzle head, and the pressure is applied by the transfer roll to transfer the image receiving layer to paper before the image receiving layer dries. As a result, a favorable image can be obtained.

[0029]

<Embodiment 2> As the intermediate image receiving medium, the same as that of the embodiment 1 is used. First a desired image is printed in the form of a mirror image on the intermediate image receiving medium using an ink jet printer having the specifications of Fig. 2, and after that, water is applied to the whole surface of the image receiving layer by a sponge roll disposed just in back thereof. Before the image receiving layer dries, the pressure is applied to transfer the image receiving layer to paper by a transfer roll. As a result, a favorable image can be obtained.

[0030]

<Embodiment 3> As the intermediate image receiving medium, the same as that of the embodiment 1. First a desired image is printed in the form of a mirror image on the intermediate image receiving medium using a commercial ink jet

printer (DESIGN JET 2500CP: manufactured by Hewlett-Packard Corp.). After that, water is applied to the whole surface of the image receiving layer by a sprayer, and pressure is applied to transfer the image receiving layer to paper by a laminator before the image receiving layer dries. As a result, a favorable image can be obtained.

[0031]

<Embodiment 4> As an intermediate image receiving medium, polyurethane resin, which is cationic-denatured and to which a hydrophilic functional radical is introduced, is coated 10 μ m thick on a polypropylene film. First a desired image is printed in the form of a mirror image on the intermediate image receiving medium using the above commercial ink jet printer. After that, a mixed solvent of toluene and isopropyl alcohol (IPA) is applied to the surface of the image receiving layer, and pressure is applied to transfer the image receiving layer to a cloth piece of polyester by a transfer roll before the image receiving layer dries. As a result, a favorable image can be obtained and simultaneously the feeling of cloth can be kept as it is.

[0032]

<Embodiment 5> As an intermediate image receiving medium, polyurethane resin, which is cationic-denatured and to which a hydrophilic functional radical is introduced, is coated 10 μ m thick on a polypropylene film. First a desired image is printed

in the form of a mirror image on the intermediate image receiving medium using the above commercial ink jet printer. After that, a mixed solvent of toluene and IPA is applied to the surface of the image receiving layer, and pressure is applied to transfer the image receiving layer to a polyester film by a transfer roll before the image receiving layer dries. As a result, a favorable image can be obtained and simultaneously the feeling of cloth can be kept as it is.

[0033]

<Embodiment 6> As an intermediate image receiving medium, polyurethane resin, which is cationic-denatured and to which a hydrophilic functional radical is introduced, is coated 10 μ m thick on a polypropylene film. First a desired image is printed in the form of a mirror image on the intermediate image receiving medium using the above commercial ink jet printer. After that, water is applied to the surface of the image receiving layer, and pressure is applied to transfer the image receiving layer to paper by a transfer roll before the image receiving layer dries. As a result, a favorable image can be obtained and simultaneously the feeling of cloth can be kept as it is.

[0034]

<Comparative Example 1> The polyurethane resin used in the embodiment 6, which is cationic-denatured and to which a hydrophilic functional radical is introduced, is directly

coated 10 μ m thick on the paper. A desired image is printed using the commercial ink jet printer. A favorable image can be obtained.

[0035]

<Embodiment 7> As an intermediate image receiving medium, polyethylene wax (its ratio to resin is 5 parts) and an ultraviolet ray absorbent NUCHIBIN 328 (its ratio to resin is 5 parts) are added to the polyurethane resin, which is cationic-denatured and to which a hydrophilic functional radical is introduced, and the obtained material is coated 10 μ m thick on a polypropylene film. First a desired image is printed in the form of a mirror image on the intermediate image receiving medium using the above commercial ink jet printer. After that, water is applied to the surface of the image receiving layer, and pressure is applied to transfer the image receiving layer to paper by a transfer roll before the image receiving layer dries. As a result, a favorable image can be obtained.

[0036]

<Embodiment 8> As an intermediate image receiving medium, methyl methacrylate resin is coated 1 μ m thick on a polyethylene terephthalate film, and subsequently polyurethane resin, which is cationic-denatured and to which a hydrophilic functional radical is introduced, is coated 10 μ m thick thereon sequentially. First, a desired image is printed in the form

of a mirror image on the intermediate image receiving medium using the above commercial ink jet printer. After that, water is applied to the surface of the image receiving layer, and pressure is applied to transfer the image receiving layer to paper by a transfer roll before the image receiving layer dries. As a result, a favorable image can be obtained.

[0037]

<Embodiment 9> As an intermediate image receiving medium, methyl methacrylate resin, to which polyethylene wax (its ratio to resin is 5 parts) and an ultraviolet ray absorbent NUCHIBIN 328 (its ratio to resin is 5 parts) are added, is coated 1 μ m thick on a polyethylene terephthalate film, and subsequently polyurethane resin, which is cationic-denatured and to which a hydrophilic functional radical is introduced, is coated 10 μ m thick thereon sequentially. First a desired image is printed in the form of a mirror image on the intermediate image receiving medium using the above commercial ink jet printer. After that, water is applied to the surface of the image receiving layer, and pressure is applied to transfer the image receiving layer to paper by a transfer roll before the image receiving layer dries. As a result, a favorable image can be obtained.

[0038]

<Embodiment 10> As an intermediate image receiving medium, acrylic melamine resin is coated 1 μ m thick on a

polyethylene terephthalate film, heat-cured, methyl methacrylate resin is coated 1 μ m thick thereon, and subsequently polyurethane resin, which is cationic-denatured and to which a hydrophilic functional radical is introduced, is coated 10 μ m thick thereon sequentially. First a desired image is printed in the form of a mirror image on the intermediate image receiving medium using the above commercial ink jet printer. After that, water is applied to the surface of the image receiving layer, and pressure is applied to transfer the image receiving layer to paper by a transfer roll before the image receiving layer dries. As a result, a favorable image can be obtained.

[0039]

<Embodiment 11> As an intermediate image receiving medium, acrylic melamine resin is coated 1 μ m thick on a polyethylene terephthalate film, heat-cured, methyl methacrylate resin, to which polyethylene wax (its ratio to resin is 5 parts) and an ultraviolet ray absorbent NUCHIBIN 328 (its ratio to resin is 5 parts) are added, is coated 1 μ m thick thereon, and subsequently polyurethane resin, which is cationic-denatured and to which a hydrophilic functional radical is introduced, is coated 10 μ m thick thereon sequentially. First a desired image is printed in the form of a mirror image on the intermediate image receiving medium using the above commercial ink jet printer. After that, water

is applied to the surface of the image receiving layer, and pressure is applied to transfer the image receiving layer to paper by a transfer roll before the image receiving layer dries. As a result, a favorable image can be obtained.

[0040]

<Embodiment 12> As an intermediate image receiving medium, polyurethane resin, which is cationic-denatured and to which a hydrophilic functional radical is introduced, is coated 10 μ m thick on a polypropylene film, the surface of which is mat-finished. First a desired image is printed in the form of a mirror image on the intermediate image receiving medium using the above commercial ink jet printer. After that, water is applied to the surface of the image receiving layer, and pressure is applied to transfer the image receiving layer to paper by a transfer roll before the image receiving layer dries. As a result, a mat-finished favorable image without gloss can be obtained.

[0041]

<Embodiment 13> As an intermediate image receiving medium, methyl methacrylate resin is coated 1 μ m thick on a polyethylene terephthalate film, the surface of which is mat-finished, and subsequently polyurethane resin, which is cationic-denatured and to which a hydrophilic functional radical is introduced, is coated 10 μ m thick thereon sequentially. First a desired image is printed in the form

of a mirror image on the intermediate image receiving medium using the above commercial ink jet printer. After that, water is applied to the surface of the image receiving layer, and pressure is applied to transfer the image receiving layer to paper by a transfer roll before the image receiving layer dries. As a result, a mat-finished favorable image without gloss can be obtained.

[0042]

<Embodiment 14> As an intermediate image receiving medium, acrylic melamine resin is coated 1 μ m thick on a polyethylene terephthalate film, the surface of which is mat-finished, and heat-cured, methyl methacrylate resin is coated 1 μ m thick thereon, and subsequently polyurethane resin, which is cationic-denatured and to which a hydrophilic functional radical is introduced, is coated 10 μ m thick thereon sequentially. First a desired image is printed in the form of a mirror image on the intermediate image receiving medium using the above commercial ink jet printer. After that, water is applied to the surface of the image receiving layer, and pressure is applied to transfer the image receiving layer to paper by a transfer roll before the image receiving layer dries. As a result, a mat-finished favorable image without gloss can be obtained.

[0043]

<Embodiment 15> As an intermediate image receiving medium,

acrylic melamine resin, to which a mat agent (its ratio to resin is 5 parts) is added, is coated 1 μ m thick on a polyethylene terephthalate film, and heat-cured, methyl methacrylate resin is coated 1 μ m thick thereon, and subsequently polyurethane resin, which is cationic-denatured and to which a hydrophilic functional radical is introduced, is coated 10 μ m thick thereon sequentially. First a desired image is printed in the form of a mirror image on the intermediate image receiving medium using the above commercial ink jet printer. After that, water is applied to the surface of the image receiving layer, and pressure is applied to transfer the image receiving layer to paper by a transfer roll before the image receiving layer dries. As a result, a mat-finished favorable image without gloss can be obtained.

[0044]

The comparative example 1 and the embodiments 6 to 11 are used and compared with each other to make a test on water resistance, light resistance and wear resistance. The water resistance is tested by dripping a water drop and evaluating smear of an image after 24 hours, the light resistance is tested by evaluating the degree of discoloration after 24 hours' irradiation with 0.25W using a fade meter, and the wear resistance is tested by evaluating the change of an image after rubbing 100 times with a load of 100g in a -- abrasion resistance test. In evaluation, the criterion is set and the resistance

is graded to five levels through the visual evaluation.

1: disappearance of original image

2: severe change

3: change

4: a little change

5: no change

This evaluation result is tabulated in Table 1.

[0045]

[Table 1]

| | Water resistance | Light resistance | Wear resistance |
|--------------------------|---------------------|---------------------|--------------------|
| Comparative example 1 | 2 | 2 | 1 |
| Embodiment 6 | 2 | 3 | 2 |
| Embodiment 7 | 2 | 4 | 3 |
| Embodiment 8 | 5 | 3 | 3 |
| Embodiment 9 | 5 | 5 | 5 |
| Embodiment 10 | 5 | 3 | 3 |
| Embodiment 11 | 5 | 5 | 5 |

Criterion of Evaluation Levels

1: disappearance of original image

2: severe change

3: change

4: a little change

5: no change

[0046]

[Advantage of the Invention]

When printing is performed according to the method of the invention, as apparent from the above result, the wear resistance, the water resistance and the light resistance, which have been disadvantages of the conventional ink jet print, can be improved. Further, since only the image receiving layer is transferred, the image receiving paper does not require special treatment, and even in the case of printing on soft image receiving paper like cloth, the feeling of the raw material will not be impaired. As to the form of the image receiving paper, printing can be performed both on film-like paper and on thick sheet-like paper.

[Brief Description of the Drawings]

Fig. 1 is a schematic diagram of the principal part in the case of using an ink jet nozzle head similarly to ink in applying water or a solvent to an image receiving layer in an ink jet printing method of the invention; and

Fig. 2 is a schematic diagram of principal part in the case of using a sponge roll as a water applicator roll in applying water or a solvent to an image receiving layer in an ink jet printing method of the invention.

[Description of the Reference Numerals and Signs]

1: intermediate image receiving medium 11: base material 12: image receiving layer 13: separating layer 14: mold releasing layer 2: image receiving paper 3: ink jet nozzle head 4: water applicator roll 5: laminate roll

Fig. 1

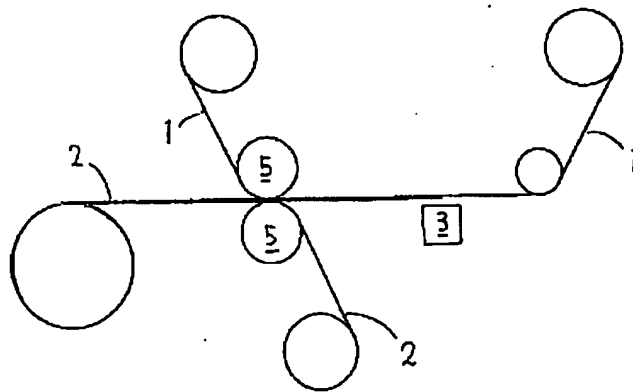


Fig. 2

